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MOSER, PATTERSON & SHERIDAN L.L.P.
595 SHREWSBURY AVE
FIRST FLOOR
SHREWSBURY, NJ 07702

EXAMINER	
ABRAHAM, ESAW T	

ART UNIT	PAPER NUMBER
2133	6

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/776,175	AZADET ET AL.	
	Examiner	Art Unit	
	Esaw T Abraham	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02/02/01* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☑ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Claims **1 to 26** are presented for examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 15 the phrase "selected to be substantially unique" renders the claim indefinite because it is unclear to the examiner what and how the selected synchronization pattern is unique. The examiner would appreciate if the applicant would clarify this matter.

Claim Rejections - 35 USC § 112, 1st paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim is **a single means claim** where a means recitation does not appear in combination with another recited of element of

means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197(Fed. Cir. 1983).

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claim **1** is rejected under 35 U.S.C. 101 because the claimed invention is directed to algorithm or data format not embedded in computer readable medium because a data structure is a specialized format for organizing and storing data which in general include the array, the file, the record, the table, the tree, etc...and any data structure is designed to organize data to suit a specific purpose. For example; in computer programming, a data structure is selected or designed to store data for the purpose of working on it with various algorithms. Therefore, a data structure is directed to mathematical algorithms or data format rather than limited to practical applications.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Rejection under 35 U.S.C. 102(e), Patent to Another with earlier Filing date, Reference is a U.S. Patent Issued Directly or Indirectly From a National Stage of, or a Continuing Application Claiming benefit under 35 U.S.C. 365© to, an International Application Having an International Filling Date Prior to November 29, 2000.

5. Claims **1-4, 7, 8, and 20,** are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Treadaway et al. (U.S. PN: 6,665,285).

As per claims **1 and 20,** Treadaway et al. disclose or teach a method of communicating Fast Ethernet data packets over a wireless link includes receiving data packets into a device from a computer network and forwarding the data packets to a broadcast device (see col. 4, lines 4-8). Treadaway et al. in figure 4, teach or disclose a digital signal processing MAC (222) includes a rate control logic (250) and a rate buffers (252) whereby the rate control logic receives Ethernet data packets (see col. 10, lines 50-57), detects each Ethernet data packet, checks each Ethernet data packet for errors utilizing a frame check sequence (FCS) appended to each Ethernet packet, strips each Ethernet data packet of its preamble and start-of-frame delimiter (frame marking or frame delineating) then store the packets temporarily in rate buffers (252) (see col. 11, lines 11-30). Further, Treadaway et al. teach that the rate buffers (252) include FIFO buffers each

provides sufficient storage for each entry so that additional information (valid bit for each nibble and an indication of whether the nibble is payload data or overhead) in which the overhead can include inter-packet gaps (IPG) codes and start-of-packet codes (see col. 11, lines 26-50 and col. 16, lines 45-16). Furthermore, Treadaway et al. teach upon retrieving each packet from the rate buffers, a packet synch/de-synch block (256) adds a synch pattern in field (see fig. 5, element 302) and a length value in field (see fig. 5, element 304) to the packet (see col. 11, 58-67 to col. 12, lines 1-34).

As per claim **2,** Treadaway et al. teach all the subject matter claimed in claim 1 including Treadaway et al. teach a rate control logic temporarily stores the packets in rate buffers whereby the rate buffers include FIFO buffers each provides sufficient storage for each entry so that additional information can be stored in the rate buffers which such additional information (the data valid bit for each nibble and an indication of whether the nibble is payload data or overhead) and the overhead include inter-packet gaps codes and start-of-packet codes in addition to that the rate control logic stores an indication of the status of the packet (e.g. too long, too short or misaligned) in the length and status buffer 254 (see col. 11, lines 25-50).

As per claims **3 and 4,** Treadaway et al. teach all the subject matter claimed in claims 1 and 2 including Treadaway et al. teach a rate control logic stores an indication of the status of the packet (e.g. too long, too short or misaligned) in the length and status buffer (254) (see col. 11, lines 25-50). Treadaway in figure 12 and lines 35-60 of column 17, teach a frame synchronizing portion (268) within the rate control logic comprising transmit buffer (252A) store an Ethernet packet, an arbitration logic (270) instructs a packet counter (272) to increment or to decrement a count by one and the packet counter maintains a current count of complete

Ethernet data packets in the transmit buffer. Although Treadaway et al. is silent to teach length indicative data element counts number of words or double words, this practice is deemed to be inherent to the Treadaway et al.'s system and by virtue of the fact the process of counting numbers of words or double words is common practice used by most of rate control logic systems to provide a high performance.

As per claims **7 and 8,** Treadaway et al. in figure 4, teach all the subject matter claimed in claim 1 including Treadaway et al. teach a radio super frame provided to PN randomizer/de-randomizer performs scrambling on entire radio super frame and further by disabling the PN randomizer/de-randomizer, the scrambled super frame can be detected upon reception and the scrambling operation maps each octet (byte) of the radio super frame to a two successive four-bit symbols utilizing a 13th order polynomial (see col. 14, 13-26).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims **5, 6, 11, 12 and 14-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Treadaway et al. (U.S. PN: 6,665,285) in view of Rouse (U.S. PN: 5,260,933).

As per claims **5 and 23,** Treadaway et al. in figure 4, teach all the subject matter claimed in claims 1 and 20 including Treadaway et al. teach a rate control logic receives Ethernet data packets, detects and checks each Ethernet data packet for errors utilizing a frame check sequence (FCS) (see col. 11, lines 11-30) and further Treadaway et al. teach rate buffers include FIFO buffers each provides sufficient storage for each overhead include an inter-packet gaps (IPG) codes and start-of-packet codes (see col. 11, lines 26-50). Although, Treadaway et al. **do not explicitly** teach "CRC" for detecting errors data element generated and positioned within the data frame, Treadaway et al. teach the method of detecting and checking data frames. **However,** Rouse in an analogous art in figure 3, teach a frame encapsulated between a start of frame delimiter and end of frame delimiter, a frame header follows the SOF and contains control information, following the frame header is data field then a 32-bit CRC checks the contents of the frame from the frame header to the end of the data field (see col. 4, lines 1-18). **Therefore,** it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to implement the teachings of Treadaway et al. including CRC data for detecting errors as taught by Rouse. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated to do so because it would be relatively and yet high reliable in operation

As per claim **6,** Treadaway et al. in figure 4, teach all the subject matter claimed in claims 1 and 5 including Treadaway et al. teach a radio super frame provided to PN randomizer/de-randomizer performs scrambling on entire radio super frame and further by disabling the PN randomizer/de-randomizer, the scrambled super frame can be detected upon reception and the scrambling operation maps each octet (byte) of the radio super frame to a two successive four-bit symbols utilizing a 13th order polynomial (see col. 14, 13-26).

As per claims **11 and 12,** Treadaway et al. in figure 4, teach all the subject matter claimed in claim 10. Although, Treadaway et al. **do not explicitly** teach "CRC" for detecting errors data element generated and positioned within the data frame, Treadaway et al. teach the method of detecting and checking data frames. **However,** Rouse in an analogous art in figure 3, teach a frame encapsulated between a start of frame delimiter and end of frame delimiter, a frame header follows the SOF and contains control information, following the frame header is data field then a 32-bit CRC checks the contents of the frame from the frame header to the end of the data field (see col. 4, lines 1-18). **Therefore,** it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to implement the teachings of Treadaway et al. including CRC data for detecting errors as taught by Rouse. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated to do so because it would be relatively and yet high reliable in operation.

As per claim **14,** Treadaway et al. in figure 4, teach all the subject matter claimed in claim 10 including Treadaway et al. teach a radio super frame provided to PN randomizer/de-randomizer performs scrambling on entire radio super frame and further by disabling the PN randomizer/de-randomizer, the scrambled super frame can be detected upon reception and the

scrambling operation maps each octet (byte) of the radio super frame to a two successive four-bit symbols utilizing a 13th order polynomial (see col. 14, 13-26). Although, Treadaway et al. **do not explicitly** teach "CRC" for detecting errors data element generated and positioned within the data frame, Treadaway et al. teach the method of detecting and checking data frames. **However,** Rouse in an analogous art in figure 3, teach a frame encapsulated between a start of frame delimiter and end of frame delimiter, a frame header follows the SOF and contains control information, following the frame header is data field then a 32-bit CRC checks the contents of the frame from the frame header to the end of the data field (see col. 4, lines 1-18). **Therefore,** it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to implement the teachings of Treadaway et al. including CRC data for detecting errors as taught by Rouse. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated to do so because it would be relatively and yet high reliable in operation.

As per claim **15,** Treadaway et al. disclose or teach a method of communicating Fast Ethernet data packets over a wireless link includes receiving data packets into a device from a computer network and forwarding the data packets to a broadcast device (see col. 4, lines 4-8). Treadaway et al. in figure 4, teach a digital signal processing MAC (222) includes a rate control logic (250) and a rate buffers (252) whereby the rate control logic receives Ethernet data packets (see col. 10, lines 50-57), detects each Ethernet data packet, checks each Ethernet data packet for errors utilizing a frame check sequence (FCS) appended to each Ethernet packet, strips each Ethernet data packet of its preamble and start-of-frame delimiter (frame marking or frame delineating) then store (write or insert) the packets temporarily in rate buffers (252) (see col. 11,

lines 11-30). Further, Treadaway et al. teach upon retrieving each packet from the rate buffers, a packet synch/de-synch block (256) adds a synch pattern in field (see fig. 5, element 302) and a length value in field (see fig. 5, element 304) to the packet (see col. 11, 58-67 to col. 12, lines 1-34). Treadaway et al. **do not explicitly teach** or mention end of frame delimiter. **However,** Rouse in an analogous art in figure 3, teach a frame encapsulated between a start of frame delimiter (SOF) and end of frame delimiter (EOF) and further the SOF Frame delimiter delineates a frame boundary, defines a sequence boundary, and identifies the Class (1, 2, or 3) of the frame and the frame header immediately follows the SOF and contains sufficient information to control the transfer of information (see col. 4, lines 1-18). **Therefore,** it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to implement the teachings of Treadaway et al. including the end of frame delimiter for marking the ending the frame as taught by Rouse. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated in order to enhance link or channel performance. As for termination flag is a character added to a transmitting frame to end the word and the practice is commonly used by most of frame transmitters or receivers.

As per claims **16-18,** Treadaway et al. in figure 4, teach all the subject matter claimed in claim 15 including Treadaway et al. teach a radio super frame provided to PN randomizer/de-randomizer performs scrambling on entire radio super frame and further by disabling the PN randomizer/de-randomizer, the scrambled super frame can be detected upon reception and the scrambling operation maps each octet (byte) of the radio super frame to a two successive four-bit symbols utilizing a 13th order polynomial (see col. 14, 13-26).

As per claim **19,** Treadaway et al. teach all the subject matter claimed in claim 15 including in figure 4, teach that the rate buffers include FIFO buffers each provides sufficient storage for each entry so that additional information (valid bit for each nibble and an indication of whether the nibble is payload data or overhead), in which the overhead can include inter-packet gaps (IPG) codes and start-of-packet codes (see col. 11, lines 26-50). Furthermore, Treadaway et al. teach upon retrieving each packet from the rate buffers, a packet synch/de-synch block adds a synch pattern in field (see fig. 5, element 302) and a length value in field (see fig. 5, element 304) to the packet (see col. 11, lines 58-67 to col. 12, lines 1-34). Treadaway et al. **do not teach** a pointer data element indicating the position of next data element. **Nevertheless,** as would have been well known to one ordinary skill in the art at the time the invention was made, pointer are required in the data structure to locate and identify a location in internal storage. **Accordingly,** it would have been obvious to one ordinary skill in the art to employ a pointer in the data structure because pointers are identifiers that indicates the location of an item of data.

7. Claims **9, 10, 13 and 24-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Treadaway et al. (U.S. PN: 6,665,285).

As per claims **9 and 24-26,** Treadaway et al. teach all the subject matter claimed in claims 1 and 20 including in figure 4, teach that the rate buffers include FIFO buffers each provides sufficient storage for each entry so that additional information (valid bit for each nibble and an indication of whether the nibble is payload data or overhead), in which the overhead can include inter-packet gaps (IPG) codes and start-of-packet codes (see col. 11, lines 26-50). Furthermore, Treadaway et al. teach upon retrieving each packet from the rate buffers, a packet

synch/de-synch block adds a synch pattern in field (see fig. 5, element 302) and a length value in field (see fig. 5, element 304) to the packet (see col. 11, lines 58-67 to col. 12, lines 1-34). Treadaway et al. **do not teach** a pointer data element indicating the position of next data element. **Nevertheless,** as would have been well known to one ordinary skill in the art at the time the invention was made, pointer are required in the data structure to locate and identify a location in internal storage. **Accordingly,** it would have been obvious to one ordinary skill in the art to employ a pointer in the data structure because pointers are identifiers that indicates the location of an item of data.

As per claim **10,** Treadaway et al. disclose or teach a method of communicating Fast Ethernet data packets over a wireless link includes receiving data packets into a device from a computer network and forwarding the data packets to a broadcast device (see col. 4, lines 4-8). Treadaway et al. in figure 4, teach or disclose a digital signal processing MAC (222) includes a rate control logic (250) and a rate buffers (252) whereby the rate control logic receives Ethernet data packets (see col. 10, lines 50-57), detects each Ethernet data packet, checks each Ethernet data packet for errors utilizing a frame check sequence (FCS) appended to each Ethernet packet, strips each Ethernet data packet of its preamble and start-of-frame delimiter (frame marking or frame delineating) then store (insert) the packets temporarily in rate buffers (252) (see col. 11, lines 11-30). Further, Treadaway et al. teach upon retrieving each packet from the rate buffers, a packet synch/de-synch block (256) adds a synch pattern in field (see fig. 5, element 302) and a length value in field (see fig. 5, element 304) to the packet (see col. 11, 58-67 to col. 12, lines 1-34). Treadaway et al. **do not explicitly** mention or teach the term protocol comprising of physical sub-layer. **Nevertheless,** as would have been well known to one ordinary skill in the art

at the time the invention was made, protocols are known in the art and required in any data transmission systems for governing the operation of functional units between communication layers. **Accordingly,** it would have been obvious to one ordinary skill in the art to use protocol comprising a plurality of layers because protocols would have been required in order to govern the interaction of processes, devices and other components within a system.

As per claims **13,** Treadaway et al. in figure 4, teach all the subject matter claimed in claim 10 including Treadaway et al. teach a radio super frame provided to PN randomizer/de-randomizer performs scrambling on entire radio super frame and further by disabling the PN randomizer/de-randomizer, the scrambled super frame can be detected upon reception and the scrambling operation maps each octet (byte) of the radio super frame to a two successive four-bit symbols utilizing a 13th order polynomial (see col. 14, 13-26).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US PN: 5,497, 404 Grover et al.

US PN: 6,546,025 Dupuy

US PN: 5,331,318 Montgomery

US PN: 5,559,796 Edem et al.

US PN: 5,905,756 Lamkin et al.

US PN: 5,321,754 Fisher et al.

US PN: 6,449,288 Chari et al.

US PN: 6,636,496 Cho et al.

9. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (703) 305-7743. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (703) 305-9595. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Esaw Abraham

Art unit: 2133

Gregory J. Lamarre
for
Albert DeCady
Primary Examiner